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Building & Highway Material Testing Laboratory
An ISO 9001:2008 Certified Company
NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ
BSCIC
ISO 9001 REGISTERED

Job No.: CTCE/BBMP/SJ/W.No.02/WMM/Gradation/2016-17

31.05.2016

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Mr. S. Jagadish,** Contractor, Bangalore.

Name of Work : Providing pot hole filling to Yelahanka old town area in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.

Reference : AEE/BBMP/YSD/AE-2/20/2016-17 Dated: 28.05.2016

Date of Testing : 31.05.2016

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **7800**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	150	150	1.9	98.1	95-100
22.4	2450	2600	33.3	66.7	60-80
11.2	1210	3810	48.8	51.2	40-60
4.75	1050	4860	62.3	37.7	25-40
2.36	925	5785	74.2	25.8	15-30
0.600	865	6650	85.3	14.7	8-22
0.075	800	7450	95.5	4.5	0-8

Note:
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31.05.2016

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	**Mr. S. Jagadish,** Contractor, Bangalore.
Name of the Work	Providing pot hole filling to Yelahanka old town area in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	AEE/BBMP/YSD/AE-2/20/2016-17 Dated: 28.05.2016
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	31.05.2016

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	379	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	78	79	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	303	
4	Aggregate Impact value = percent fines	20.58	20.68	
	$100^* (W_2/W_1)\%$			20.63

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/SJ/W.No.02/WMM/S-T/2016-17 31.05.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	**Mr. S. Jagadish,** Contractor, Bangalore.
Name of Work	*Providing pot hole filling to Yelahanka old town area in Ward No.02 of* Yelahanka Sub Division, BBMP, Bangalore.
Reference	AEE/BBMP/YSD/AE-2/20/2016-17 Dated: 28.05.2016
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	31.05.2016

Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **12.13%**

Elongation Index = **13.85%**

Result : Combined Flakiness & Elongation index 25.98%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No: CTCE/BBMP/W.No.39/GNR/BC/Bitumen/2016-17 14.06.2016

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
AGENCY	**Mr. S. Jagadish,** Contractor, Bangalore.
NAME OF THE WORK	Providing pot hole filling to Yelahanka old town area in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/YSD/AE-2/20/2016-17 Dated: 28.05.2016
SAMPLE I/D	Pot hole filling to Roads in Yelahanka old town area in Ward No.02.
DATE OF TESTING	14.06.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	26.50
7. Bitumen content in %	5.20	5.30
8. Average	5.25	

Note:

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Job No: CTCE/BBMP/W.No.39/GNR/BC/Bitumen/2016-17 14.06.2016

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

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AGENCY	**Mr. S. Jagadish,** Contractor, Bangalore.
NAME OF THE WORK	Providing pot hole filling to Yelahanka old town area in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/YSD/AE-2/20/2016-17 Dated: 28.05.2016
SAMPLE I/D	Pot hole filling to Roads in Yelahanka old town area in Ward No.02
DATE OF TESTING	14.06.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	46.25	9.76	9.76	90.24	79-100
9.5	34.15	7.20	16.96	83.04	70-88
4.75	71.22	15.03	31.99	68.01	53-71
2.36	65.65	13.85	45.84	54.16	42-58
1.18	51.22	10.81	56.64	43.36	34-48
0.6	51.23	10.81	67.45	32.55	26-38
0.3	46.32	9.77	77.22	22.78	18-28
0.15	41.22	8.70	85.92	14.08	12-20
0.075	38.52	8.13	94.05	5.95	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	35.15	7.42	7.42	92.58	79-100
9.5	47.25	9.98	17.40	82.60	70-88
4.75	65.25	13.78	31.18	68.82	53-71
2.36	72.23	15.25	46.44	53.56	42-58
1.18	74.25	15.68	62.12	37.88	34-48
0.6	40.22	8.49	70.61	29.39	26-38
0.3	33.13	7.00	77.61	22.39	18-28
0.15	27.15	5.73	83.34	16.66	12-20
0.075	43.25	9.13	92.48	7.52	4-10

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BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

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NAME OF THE WORK	Providing pot hole filling to Yelahanka old town area in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/YSD/AE-2/20/2016-17 Dated: 28.05.2016
SAMPLE I/D	Pot hole filling to Roads in Yelahanka old town area in Ward No.02.
DATE OF TESTING	16.06.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	27.00
7. Bitumen content in %	5.20	5.40
8. Average	5.30	

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BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
AGENCY	Mr. S. Jagadish, Contractor, Bangalore.
NAME OF THE WORK	Providing pot hole filling to Yelahanka old town area in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/YSD/AE-2/20/2016-17 Dated: 28.05.2016
SAMPLE I/D	Pot hole filling to Roads in Yelahanka old town area in Ward No.02.
DATE OF TESTING	16.06.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	44.15	9.31	9.31	90.69	79-100
9.5	36.16	7.63	16.94	83.06	70-88
4.75	70.22	14.81	31.76	68.24	53-71
2.36	65.26	13.77	45.53	54.47	42-58
1.18	53.26	11.24	56.76	43.24	34-48
0.6	53.13	11.21	67.97	32.03	26-38
0.3	43.15	9.10	77.07	22.93	18-28
0.15	36.36	7.67	84.74	15.26	12-20
0.075	42.25	8.91	93.66	6.34	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	36.36	7.69	7.69	92.31	79-100
9.5	48.25	10.20	17.89	82.11	70-88
4.75	67.15	14.20	32.08	67.92	53-71
2.36	70.22	14.85	46.93	53.07	42-58
1.18	73.13	15.46	62.39	37.61	34-48
0.6	43.13	9.12	71.51	28.49	26-38
0.3	34.15	7.22	78.73	21.27	18-28
0.15	26.36	5.57	84.30	15.70	12-20
0.075	38.25	8.09	92.39	7.61	4-10

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